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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/599,544	06/23/2000	Joseph Herbst	108339-09033	1196

32294 7590 06/25/2004

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EXAMINER	
LOGSDON, JOSEPH B	

ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 06/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/599,544	HERBST, JOSEPH	
	Examiner	Art Unit	
	Joe Logsdon	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 April 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections—35 U.S.C. 103 (a):

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiussi et al. (U.S. Patent Number 5,701,292) in view of Hatono et al. and Ikeda.

With regard to claims 1-4, 10, 12, 13, 18, and 19, Chiussi et al. teaches a method and system for controlling the data transfer rate of data sources (column 2, lines 2-3). Chiussi et al. teaches two thresholds for a queue size (abstract; column 2, lines 3-44). The method comprises the steps of determining if a quantity of queued data exceeds a first threshold ("high water mark"; "second threshold" in Chiussi et al.; abstract); and if it

exceeds the first threshold, transmitting an RM cell to a source of the cells (column 2, lines 2-13), wherein the RM cell causes a reduction in transmission rate (column 2, lines 2-44); the "first threshold" in Chiussi et al.. serves as a low water mark, and the "second threshold" in Chiussi et al. serves as a high water mark (column 2, lines 35-44). Attainment of either threshold can be considered a "spatial requirement." Chiussi et al. fails to teach disabling the data flow and re-enabling the data flow upon satisfying a spatial requirement and a temporal requirement. Ikeda teaches disabling a data flow when the queue length of a node exceeds a threshold (abstract). Enabling or disabling the source, as in Ikeda, would be a simple method of flow control. Hatono et al. teaches the use of two thresholds (spatial requirements) and a permissible time (temporal requirement; abstract). The queue length is measured; when it exceeds a higher, first threshold, a timer is started; when it goes below a second, lower threshold, the timer is reset to zero; if the timer exceeds a threshold (permissible time), feedback control is used to slow down the source (abstract). Re-enabling the source after it has satisfied both a temporal and a spatial requirement would be advantageous because it would take into account the randomness of the data flow; because the data flow is random, any estimate of congestion by the queue is more accurate if it is done over a period of time. It would have been obvious to one of ordinary skill in the art to modify the teaching of Chiussi et al. so that when the queue occupancy exceeds a first threshold, the source is disabled, and the second threshold, which is taught in Chiussi et al., is used so that when the queue length is below the second threshold (preferred operational level"; "spatial requirement") for a predetermined time ("temporal requirement") the data flow is re-enabled, as suggested by Ikeda and Hatono et al., because such an arrangement is simple and would

enable flow control while at the same time taking the randomness of the data flow into account.

With regard to claim 5, Chiussi et al. teaches a method and system for controlling the data transfer rate of data sources (column 2, lines 2-3). Chiussi et al. teaches two thresholds for a queue size (abstract; column 2, lines 3-44). The method comprises the steps of determining if a quantity of queued data exceeds a first threshold ("high water mark"; "second threshold" in Chiussi et al.; abstract); and if it exceeds the first threshold, transmitting an RM cell to a source of the cells (column 2, lines 2-13), wherein the RM cell causes a reduction in transmission rate (column 2, lines 2-44); the "first threshold" in Chiussi et al.. serves as a low water mark, and the "second threshold" in Chiussi et al. serves as a high water mark (column 2, lines 35-44). Attainment of either threshold can be considered a "spatial requirement." Chiussi et al. implicitly defines the preferred operational range as the range for which the quantity of data in the queue is below a threshold ("low water mark"; column 2, line 2-44). Chiussi et al. implicitly defines the congested operational range as the range for which the quantity of data in the queue exceeds a threshold ("high water mark"; column 2, line 2-44). Chiussi et al. implicitly defines the quasi-operational range as the range between the two thresholds (column 2, lines 3-44). Chiussi et al. fails to teach disabling the data flow and re-enabling the data flow upon satisfying a spatial requirement and a temporal requirement. Ikeda teaches disabling a data flow when the queue length of a node exceeds a threshold (abstract). Enabling or disabling the source, as in Ikeda, would be a simple method of flow control. Hatono et al. teaches the use of two thresholds (spatial requirements) and a permissible time (temporal requirement; abstract). The queue length is measured; when it exceeds a

higher, first threshold, a timer is started; when it goes below a second, lower threshold, the timer is reset to zero; if the timer exceeds a threshold (permissible time), feedback control is used to slow down the source (abstract). Re-enabling the source after it has satisfied both a temporal and a spatial requirement, as in Hatono et al. would be advantageous because it would take into account the randomness of the data flow. It would have been obvious to one of ordinary skill in the art to modify the teaching of Chiussi et al. so that the second threshold, which is taught in Chiussi et al., is used so that when the queue length is below the second threshold (preferred operational level"; "spatial requirement") for a predetermined time ("temporal requirement") the data flow is re-enabled, as suggested by Ikeda and Hatono et al., because such an arrangement is simple and would enable flow control while at the same time taking the randomness of the data flow into account.

With regard to claims 6-9, Chiussi et al. implicitly defines the preferred operational range as the range for which the quantity of data in the queue is below a threshold ("low water mark"; column 2, line 2-44). Chiussi et al. implicitly defines the congested operational range as the range for which the quantity of data in the queue exceeds a threshold ("high water mark"; column 2, line 2-44). Chiussi et al. implicitly defines the quasi-operational range as the range between the two thresholds (column 2, lines 3-44).

With regard to claim 11, Chiussi et al. does not teach a timer. Hatono et al. teaches a timer (abstract). It would have been obvious to one of ordinary skill in the art to modify the invention of Chiussi et al. to teach a timer, as in Hatono et al., so that, when the quantity of data in the queue is below the preferred operational range for a time set by

the timer, data flow into the queue is re-enabled, because such an arrangement would take into consideration the fact that the queue length changes randomly in a manner that does not necessarily represent current conditions in the network of which it is a part.

With regard to claims 14 and 15, Chiussi et al. inherently teaches a memory management unit and a status location budget manager because the system manages a queue, which is a type of memory.

With regard to claims 16, 17, and 23, Chiussi et al. inherently teaches that the means for disabling and means for enabling each comprises a status location budget manager because the means for disabling manages the level in the queue by comparing the level of the queue to thresholds ("budgets").

With regard to claim 20, Chiussi et al. teaches at least one data port interface (16 and 17 in Fig. 3); at least one queue in connection with the at least one data port interface for receiving data transmitted to the at least one data port interface (7 and 8 in Fig. 3); a memory management unit in connection with the at least one queue ("controller" 6 in Fig. 3; column 4, line 58 to column 5, line 43), wherein the memory management unit causes a reduction in data flow to the queue when a level of data in the queue reaches a first predetermined threshold, and thereafter causes an increase in the data flow rate to the queue when the level of data in the queue reaches a second predetermined threshold (column 4, line 58 to column 5, line 43). Chiussi et al. fails to teach enabling and disabling the data flow to the queue and fails to teach that the measurements of the queue length are for a duration which is a predetermined amount of time. Ikeda teaches disabling a data flow when the queue length of a node exceeds a threshold (abstract). Enabling or disabling the source would be a simple method of flow control.. Hatono et al.

teaches the use of two thresholds (spatial requirements) and a permissible time (temporal requirement; abstract). It would have been obvious to one of ordinary skill in the art to modify the teaching of Chiussi et al. so that when the queue occupancy exceeds a threshold, a source is disabled, and the second threshold, which is taught in Chiussi et al., is used so that when the queue length is below the second threshold ("first threshold" in Chiussi et al.; "preferred operational level") for a predetermined time the data flow is re-enabled, as suggested by Ikeda and Hatono et al., because such an arrangement is simple and would enable flow control while at the same time taking the randomness of the data flow into account.

With regard to claims 21 and 22, one threshold in Chiussi et al. can be considered a high water mark and the other threshold can be considered a low water mark because when the level exceeds one threshold, transmission is slowed, but when it reaches the other threshold, transmission is speeded (column 2, lines 35-44; column 4, line 67 to column 5, line 11; column 5, lines 22-29).

With regard to claim 23, the controller of Chiussi et al. can be considered a status budget monitor because it determines the rate of source transmission based on congestion status of the queue (column 4, line 58 to column 5, line 43).

Response to Arguments:

4. Applicant argues that the cited prior art fails to teach or suggest "disabling a data flow to the port from the other ports of the plurality of ports." But, as acknowledged by Applicant, the references teach transmission of RM cells to sources external to the

switch, which has the same end result of disabling a data flow to the port from the other ports of the plurality of ports. In other words, control of congestion by controlling the sources has the same effect as control of congestion by controlling flow within the switch; they both result in reduced congestion at the switch. An RM cell, although transmitted to a destination external to the switch, disables a data flow to a port from other ports.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joe Logsdon whose telephone number is (703) 305-2419. The examiner can normally be reached on Monday through Friday from 10:00 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached on 703-305-4744. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Joe Logsdon

Patent Examiner

Friday, June 18, 2004

HASSAN KIZOU
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